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THE USE OF THE ATUMICS METHOD FOR THE DEVELOPMENT OF DESIGNS FOR WOMEN'S LEATHER BAGS

Daffa Afisona Fernanda [1], Ribangun Bamban Jakaria [*,2]
[1,2] Industrial Engineering Study Program, Muhammadiyah Universitas of Sidoarjo, Indonesia

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ABSTRACT

Abstract: Leather bags are popular consumer products, frequently undergoing innovations to meet evolving aesthetic preferences and market demands. While leather artisans continuously experiment with new designs, integrating traditional and contemporary styles remains an underexplored area, especially in the application of batik printing on leather. To address this **knowledge gap**, this study seeks to enhance leather bag designs by incorporating batik printing, aiming to modernize traditional motifs and elevate the cultural value of these products. Using the ATUMICS method—a structured approach that harmonizes traditional and modern elements through Artifact, Technique, Utility, Material, Icon, Concept, and Shape criteria— the study examined the impact of adding batik printing designs on the feasibility and consumer appeal of leather bags. Findings reveal that leather bags with batik printing achieve higher feasibility scores, with product evaluations improving from 30–65% to 80–100% after applying the ATUMICS method, based on a questionnaire completed by ten experienced artisans. Validity and reliability tests yielded values (validity: 0.716–0.967; reliability: Cronbach's Alpha 0.885) that confirm the robustness of the instrument used. **The novelty** of this research lies in demonstrating the potential of batik-printed leather bags as a culturally resonant, modern product for broader markets. **Implications** suggest that integrating traditional patterns with contemporary aesthetics can revitalize interest in leather crafts and serve as a model for other traditional crafts, providing artisans with valuable insights into product differentiation and market adaptation. Future research should expand on design variations in form and color to further enhance the diversity of leather bag offerings and maintain the cultural significance of traditional art forms in modern fashion.

Corresponding Author:
Ribangun Bamban Jakaria
Industrial Engineering Study Program, Muhammadiyah Universitas of Sidoarjo
E-mail : ribangunbz@umsida.ac.id
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INTRODUCTION

Entering 2016, Indonesia must be ready to face the era of globalization or the global market, the ASEAN Free Trade Area (AFTA) and the ASEAN Economic Community (AEC). If the WTO is a body whose purpose is to regulate world trade, then it implements policies related to free trade, where the policy gives freedom to countries in the world to market products and services between countries to compete with the creative industry. It is about influencing the economy, which can directly improve the nation's image based on renewable natural resources [1]. Indonesia is also a country with a number of industries in the use of leather as a material for business productivity. Currently, the productivity of leather bags is quite in demand by several industrial business actors. It is recorded in the Indonesian Ministry of Industry that there is data on more than 30 companies registered in writing [2]. Basically, this makes an opportunity for industry players to add creative ideas to the products they make. The addition of this creative idea is certainly needed by business actors to attract the interest of the public, especially women where bag products are one of the kinds of accessories that make a need for women.

However, it should be noted that currently there are still many production of leather bags that tend to be monotonous and with models of plain color shapes make many things from this industry look the same as others. The tendency in the shape of leather bags certainly makes craftsmen have to think about several things to make the side of the leather bag they produce look attractive in the eyes of consumers, and the general public visually [3]. In the sales figures at the research site where it is stated that there is a decrease in the production of leather bags made with plain designs, in the last few months, namely July to October, there has been a decline where the initial production reached 300 bags per month to 200 bags in a period of time. This makes one of them with a new innovation and creative idea, namely regarding the development of a design from the basis of the previous leather bag shape. Some of the creative ideas that are poured out certainly underlie the making of unique leather bags with a quality style, where currently the expectations of the public, especially women, will certainly like all things with a high creative style [4]. Research related to bag product design states that development in terms of function and design highlights that they adjust the design made to the needs of the existing community so that they are able to give rise to new design concepts in the manufacture of women's bag products [5]. So from the description of leather innovation products, it is also expected to be able to increase market interest so as to expand market segments with wider preferences, especially related to the designs used [6].

Furthermore, the development of the design used is of course inseparable from some traditional elements or old varieties into modern elements where later the development carried out has a meaning that is easy for the public to know. The development of this design is also based on previous research which will later give rise to a new innovation and motivation for industrial sector drivers to continue to develop design as a new function in product manufacturing [7]. The development of the design will certainly create new icons in its manufacture which will later strengthen each other between the design icons made [8]. Broadly speaking, it is revealed that design development is developed to meet the needs and attract public interest in the attractiveness of the product design made. So that the research that will be carried out in developing designs that are in demand by women today, if one of the things that attracts interest is

the design of bag products, then of course there needs to be the addition of several changes in the stages that need to be done, one of which is the development of methods in making leather bags. The development of this method is carried out to prevent the monotony of leather bag variations that are common among the leather bag industry [9]. One of the ways to develop this method can be to use the Atumics method in the design to be made. The use of the Atumics method in this condition, of course, is indispensable in making design changes that will be made to leather bag products. In addition, the use of the atumics method is expected to be able to maintain and develop more creative design ideas made towards the manufacture of women's leather bags.[10].

The purpose of using the ATUMICS method is of course to add traditional design with modernity and unite into a new product from before[11]. Previous research has used this method to create a new innovation between traditional and modern elements[12]. The results of this ATUMICS method will certainly carry out a feasibility assessment of the previous product.

METHODS

In this study, the method of collecting data is by conducting interviews, observations and questionnaires. In the interview, they will look for information data related to production. Direct observation to find a product made. The questionnaire was used to make an assessment of the feasibility of the product with the number of respondents of 10 workers at the research site, with inclusion criteria, namely permanent workers who participated in observing during the process of making leather bag products, and exclusion was new workers at the research site, where they would later give an assessment on the questionnaire provided by the researcher, both assessments before and after the use of the ATOMICS method. The questionnaire was then tested to be valid with a validity value of 0.716 to 0.967 > 0.632 from the r table on 5 questions and was declared valid. The reliability test will be said to be reliable if Cronchbach's Alpha value > 0.60 [13]. Then in the reliability test where the output of Cronbach's Alpha value was 0.885> 0.60, which in this result is said to be reliable. The research was carried out using the ATOMICS Method, with the resulting criteria, namely:

a. Artefact (A), leads to the subject that is the main subject of research is batik printing design.
b. Technique (T), technology refers to some technical knowledge, namely manufacturing techniques or making a craft until it becomes a product, its process and history, or other things that affect it. It also refers to any way or process to realize the utilization of potential.
c. Utility (U), a tool of an object, from a semantic point of view, utility and usefulness have two meanings, namely in the context of the use and content of a product or object. For example, traditional batik patterns, in the context of products/objects, traditional batik patterns function as materials for making leather bag designs, and in the context of other uses, traditional batik patterns with sewing techniques will improve product quality.

d. Material (M), discusses the external description of the object. In the field of architecture and design design, concepts focus on the results of an object or product.
e. Icon (I), refers to symbolic forms that come from nature (flora and fauna), geography, ornaments, colors, mythology, figures, artifacts. The iconic arrangement is to create the symbolic meaning of an object.
f. Concept (C), includes the factors behind the creation of a shape. Concepts can be seen through observation, such as activities, norms, beliefs, characteristics, feelings, intuition, spirituality, ideological values, and culture.
g. Shape (S), includes the image, performance, as well as the characteristics of the external shape of an object, which is contained in the analysis of its proportional shape.

The research flow used is as follows:

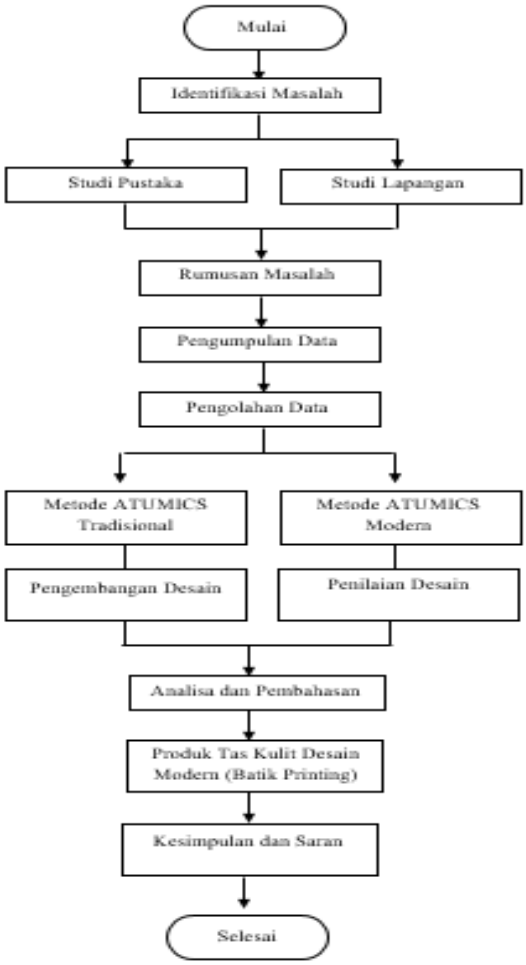

Figure .1 Research Flow Diagram

RESULT AND DISSCUSION

A. Design Aspects in ATUMICS

Cultural traditions can be preserved by transforming traditional culture into modern culture. One of them is the ATOMICS Method. The main principle of the ATUMICS method is about configuration, integration, integration, or fusion between the basic elements of the tradition of modernity. In product design, this technique is used to incorporate traditional cultural characteristics from a number of modern cultures. Based on the comparison between the previous leather bag product designs, the use of batik design in making leather bags is described as follows:

Table 1 Analysis of Product Design Development of Leather Bags with Batik Using the ATUMICS Method

Variable	Parameter	Information
Artefact	 Traditional Batik Design	In Indonesian culture, batik is an old art form that has the best quality. The word batik comes from the Javanese language, namely "amba" (writing) and "nitik" (point).
Technique	Batik Making Techniques	In the traditional batik manufacturing technique system, of course, there are many encounters regarding the use of canting to draw batik designs.
Utility	Function	As a decoration or clothing design.
Icon	Ornament	Single design
Concept	Traditional works	The concept of batik can be seen from the techniques used and functions where in this case it still uses

Shape	Shape	traditional elements, namely the use of canting and the use of one function Still with a large enough shape, with the use of a certain size of fabric

Based on table 1 above, it can be said that there are several elements that will be used and eliminated in the development of leather women's bag designs, namely:

1. In the element maintained: Maintaining the main ingredient in making women's bags, namely using animal skin.
2. In the added elements: The addition of the design, namely with traditional elements of batik works
3. On the changed element: The design addition technique that previously used canting, was changed to printing

So that the above problems in design problems need to

(1) The product has design innovations from traditional handicraft products;

(2) The use of additional supporting materials that are easy to obtain;

(3) The process of working on the product is carried out by leather bag and batik craftsmen.

Meanwhile, *the positioning of* leather products with batik designs, includes:

(1)Target female users;
(2)General age;
(3)Social Class (all circles);
(4)Segmentation (general public);
(5)Usage (used to carry goods while traveling).
In accordance with the image board, the desired product impression is as follows:

(1)Products in the form of leather bags with modern batik designs;

(2)Products use batik printing design techniques;
(3)Minimalist and textured product shapes;
(4)The product is suitable for combining as bohemian style, chic style, as well as feminine and semiformal style;
(5)Fashion-oriented products targeted at teenage girls, office workers, and those interested in trends;
(6)The product is suitable for carrying light items, such as mobile phones, wallets, and some ordinary cosmetics;
(7)The product is used by carrying or slinging.

This leather bag product with a batik printing design has a rectangular shape with a size of 28 x 10 x 20 cm. There is a batik design on the outer surface where the first impression that will be seen is the motif on the leather bag batik. The leather bag comes with two straps: one short for carrying, and one for sling that can be found on the side of the bag.

B. Making the Batik Design Development Process on Leather Bag Products

In the use of batik design development, the first thing to do is to make a sketch of a batik image, where later the part will be given a bright color and attract the main attention of young people. The next stage is to perform the product prototype procedure. Several steps must be passed before being put into leather goods; The first step is to create a dummy component of alternative media. Next, create the stamp that was previously created in the form of an icon design. This batik motif pattern stamp can be implemented either by using the cold stamp or hot stamp approach. At the final stage of manufacturing, the finished batik design is pasted on existing leather bags, or implemented.

Table 2 Overview of the Differences in Design Development Before and After Using the ATUMICS Method

ARTIFACT	TRADISIONAL	MODERN
Technique	Use of techniques Canting Batik	The use of design additions using batik stamp or batik printing techniques
Utility	As a decoration or Clothes	As an addition to the design of leather bag products
Material	Using materials Plain leather without any design	Addition of batik printing or stamp design on the outside of leather bag products
Icons	Using color Plain	The color transformation of batik is a light color and given to the outside of the leather bag
Concepct	As a general style Clothes	As a general style of women and the addition of interesting sides of products related to batik design
Shape	Size tends Big	Vary

Table 2 explains the difference in design development before and after using ATUMICS. At each stage, a mixture of traditional things is carried out to modernization. In *the* traditional initial stage technique, where the use of batik design in general is to use canting, then it is changed by adding a design with a stamp or batik printing technique. In *Utility*, it was found that the use in terms of batik itself is as a decoration or clothing material, then changed to be an additional design to leather bag products. *The material* used is plain leather without any design (in leather bag making products), then changes are made by adding batik printing designs or stamps on the outside of leather bag products. Icons use plain colors in general conditions, then make a transformation of batik colors towards light colors and give them to the outside of leather bags. The creation of the *Concept* where as a general style of clothing was changed to a general style of women and the addition of an attractive side of the product related to batik design.

In the shape made, the traditional side with the size tends to be large, and changed to be more varied.

C. Overview of the Process of Making Design Development on Leather Bag Products Using the ATUMICS Method

Figure 2. A Simple Overview of the Design Development Manufacturing Flow Using the Atumics Method in Leather Bag Products

Figure 3 explains the flow in making design development on leather bag products, where a simple description starts from the main materials and tools, and several manufacturing processes to the end in the form of the results of the description of leather women's bag products.

D. Design Feasibility Test Process in Design Development on Women's Leather Bag Products

In the feasibility test process regarding the assessment of leather bag products after using the design with the ATUMICS method, the results were obtained that the scoring criteria from the questionnaire made by the researcher for 5 question items at each point using the Likert scale. The Likert scale is used to measure the attitudes, opinions and perceptions of a person or group of people about social phenomena. With the Likert scale, the variables to be measured are described as variable indicators. Then the indicator is used as a starting point to compile instrument items that can be in the form of statements or questions [14], namely:

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree,

Likert scale questions that require respondents to choose one of the poles due to the absence of a "neutral" option can also use a four-point Likert scale. While an alternative scale of 5 (five) is often used, there are several instances when a scale ending in 9 (nine) or 7 (seven) levels is also used. Likert scale surveys that ask respondents to choose one of the preferred poles in the absence of a "neutral" option

can also use a four-point scale. The Likert Scale can sometimes exclude critical points that lie between agreeing and disagreeing, denoted as "neutral." Respondents were forced to choose between extremes of agreement and disagreement in this regard. The purpose of the survey is to prevent respondents from seeing themselves as impartial or have no opinions. Regarding the adjustments made to the Likert scale or questionnaire with the intention of eradicating the limitations that exist in the five-level scale, there are many justifications as illustrated below:

Modification of the Likert scale eliminates the middle answer category based on the following reasons:

a. The Undeciden category has double significance; It can be interpreted as the inability to reach a conclusion or provide a response (as per the first concept), while it can also signify neutrality, unconditional agreement or disagreement, or even doubt. Obviously, this kind of multi-interpretable response is not anticipated from an instrument.
b. The central tendency effect is generated by the availability of a central response, especially for those who are unsure whether the respondents' position is leaning toward agreement or disagreement. Providing response categories will significantly reduce the quantity of research data that respondents can obtain.

   The point in this case is to avoid the possibility of various answers in the middle where in this case the researcher makes modifications to the 4 answers given scale, to make sure in each respondent's answer [15]. The highest total score is 20 points. Then in the final result, the percentage before and after the design addition with the ATOMICS method will be known.

The percentage criteria made by the researcher himself are where the result categories are:

1. Low rating category: 0-35%
2. Medium rating category: 40-65%
3. High rating category: 70-100%

The writing of percentage results uses the following descriptive calculation formulation:

$$P = x\ 100\%\frac{F}{N}$$

With explanatory representation:

P : Presentase

F : Answer frequency

N : Total respondents

Data Tabulation before the use of the ATUMICS Method is carried out as follows:

Table 3 Data Tabulation Before the ATUMICS Method

Description	Answer per Item									
Design Quality	2	1	2	2	2	2	2	2	2	1
Design Color	2	1	2	3	2	2	2	1	2	1
Design Motifs	3	1	3	3	3	2	2	2	1	1
First Assessment Views	3	2	3	2	3	2	3	2	2	1
Interesting to In Production	3	2	3	2	3	2	3	3	3	2
Total	13	7	13	12	13	10	12	10	10	6
Total %	65%	35%	65%	60%	65%	50%	60%	50%	50%	30%

Table 3 explains the results of the tabulation of the use of the design using the ATOMICS method. In the first respondent, the result was obtained that each statement item has its own assessment, where the respondent mentioned in the statement item assessing the assessment category 2, namely regarding the quality of the design given before the ATUMICS method looked attractive and the respondent assessed with the number 2 which means his disapproval. Then in the statement of items regarding the quality of the design, the second respondent gave a review 1 which means that they strongly disagree, if the quality of the design used in the leather bag products made looks attractive. The assessment of number 3 was found in several statement items, one of which was regarding the design motif given by the first respondent and so on, where they agreed if the design motif that was made before the use of the ATOMICS method was compatible. If you look at the percentage given, it is found that before the ATUMICS method was found that the largest percentage assessment was 65% which stated that the assessment given about leather bag products before the use of the ATUMICS method had a moderate assessment range, this explains that the ATUMICS method is at least able to be made and tried in the development of the next leather bag product design.

Table 4 Data Tabulation After the Use of the ATUMICS Method

Description	Answer per Item									
Design Quality	3	3	3	4	3	4	3	4	3	4
Design Color	4	3	3	4	3	4	3	4	4	4
Design Motifs	4	3	3	4	3	4	3	4	4	3
First Assessment	4	3	4	4	3	4	3	4	4	4
Views	3	3	3	3	3	4	3	4	4	4
Interesting to In Production	18	15	16	19	15	20	15	20	19	19
Total	90	75	80	95	75	100	75	100	95	95
Total %	%	%	%	%	%	%	%	%	%	%

Table 4 explains the results of tabulation after using the ATUMICS method where the average number gives rise to the assessment on numbers 3 and 4. Reasoning for example in the results of the first respondent where in the statement item about the design quality given after the use of the ATOMICS method, the respondents gave 3 assessments where in this case they agreed that the quality of the design highlighted had an interesting side from the previous design quality of leather bag products. Then in the number of assessment category 4, there were several statement items, one of which was in the sixth respondent where the respondents strongly agreed that the five statement items regarding the use of the ATUMICS method in design development have an interesting side and are more suitable than previously made leather bag products. Basically, the assessment of the number 4 on the data tabulation indicated means that the respondents have an opinion that strongly agrees with the use of the ATUMICS method in the development of leather bag product design. The percentage of the assessment range listed reaches 100% also means that the respondents' assessment of the use of the ATUMICS method is very high and it is likely that they have their own interest in production in the next conditions.

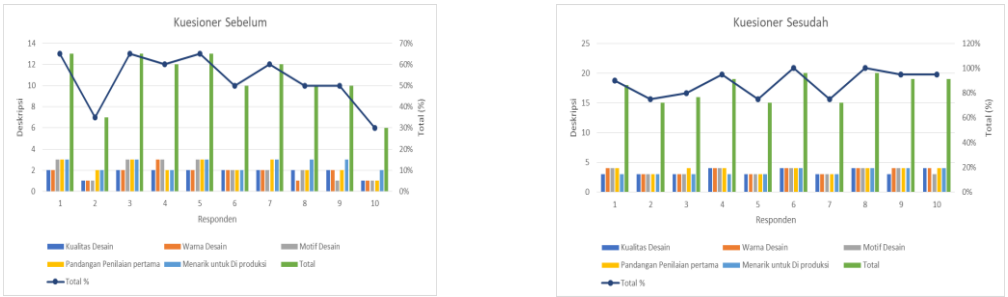

Figure 3 Product Assessment Diagram Before and After ATUMICS Method

Figure 3 above illustrates the level of results obtained by tabulation of data obtained before the atumics method in the display of bar charts and graphs, which is generated from the number of respondents' answers given.

CONCLUSION

Conclusion: This study demonstrates that incorporating batik printing designs into leather bag production significantly enhances product feasibility, with assessments improving from an average range of 30–65% to 80–100% following the application of the ATUMICS method. **The fundamental** finding underscores the potential of blending traditional motifs with modern design principles to revitalize the leather bag industry and meet contemporary consumer preferences. **The implications** of these findings suggest that artisans can leverage traditional art forms to innovate their products, thereby appealing to a broader market while preserving cultural heritage. However, limitations of this research include the small sample size of respondents, which may not fully represent the diversity of consumer opinions in the market. **Future research** should explore a wider range of design innovations, incorporating various shapes and colors, to further enhance the diversity of leather bag offerings and evaluate the long-term market impact of these innovations on consumer behavior and artisan sustainability.

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